



USING CLASS DATA TO DECODE A MESSAGE

Subject: Mathematics | Current: 2010 | Grade: 9-12

Day: 3 of 3

1 Purpose ----- To use class data to decode a message.

2 Duration of Lesson ----- Approximately one 55 minute period.

3 Additional Topics ----- None.

4 Objectives ----- At the conclusion of this lesson students will be able to use class data to decode a message.

5 Standards & Benchmarks ----- **MATHEMATICS**

PROBABILITY & STATISTICS

Create, compare, and evaluate different graphic displays of the same data, using histograms, frequency polygons, cumulative distribution functions, pie charts, scatter plots, stem-and-leaf plots, and box-and-whisker plots. Draw these by hand or use a computer spreadsheet programs.

PS.1.1

INTEGRATED MATHEMATICS I

Students find measures of the center and variability of a set of data, as well as construct and analyze data displays and plot least square regression lines.

IM1.4

Construct a frequency table for a set of data.

IM1.4.10

BUSINESS MATH

Construct and interpret frequency distribution.

BMTH.1.3.3



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BUSINESS, MARKETING, & INFORMATION TECHNOLOGY

INFORMATION TECHNOLOGY

Students demonstrate knowledge of communication standards for networks.

IT.13.7

Demonstrate knowledge of various encoding and framing methods (e.g., Manchester, B8Z8)

IT.13.7.3

Students demonstrate knowledge of data-encoding basics.

IT.13.8

Indiana Department of Education. (n.d.). Indiana Standards and Resources: Mathematics: Integrated Mathematics, Probability and Statistics, and Business Math; Business, Marketing, and Information Technology. Retrieved from <http://dc.doe.in.gov/Standards/AcademicStandards/StandardSearch.aspx>

6 Vocabulary ----- None.

7 Materials ----- Questions answered in previous class lesson, computers.

8 Additional Resources ----- None.

9 Procedures & Methods ----- **A. Introduction**

Teacher will lead discussion of questions and answers from previous lesson. A list and the percentages of the most common consonants and vowels should be listed where all students can view them. The question that needs to be addressed in this discussion is: How would this information help us in decoding a message that uses only letters in the code?

B. Development

Distribute the computers to students; working with a partner is ideal:

Students should access: <http://scottbryce.com/cryptograms/>



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This site provides information about cryptograms, frequently used letters, words, and other data about frequency. Have students read the information provided and select a cryptogram to decode.

C. Practice

Students need to copy their coded message so they can complete the decoding as their homework assignment if they aren't able to complete it in class.

D. Independent Practice

Students will write a one page paper on their decoding process, identify how the frequency information aided in their decoding, and support their statements with information from their class data.

E. Accommodations (Differentiated Instruction)

Struggling students may need to have some hints to help them get started. Seeing groups of letters that are meaningless may be confusing.

F. Checking For Understanding

Monitor students' progress by roving throughout the classroom during the exercise.

10 Evaluation

----- A completed, correctly de-coded message; completed 1-page paper.

11 Teacher Reflection

----- To be completed by the teacher after the lesson.

12 Resources & Media

----- Computers

Questions answered in previous class lesson

<http://scottbryce.com/cryptograms/>

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